AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A rotor in a synchronous machine, comprising:

a superconducting field winding assembly having a coil winding and at least one winding support extending between opposite sides of the winding, wherein opposite ends of said winding support attach to the coil winding, and

a rotor core formed of a plurality of rotor core sections, each of said core sections having a slot to receive said winding support, wherein said winding support is thermally isolated from said rotor core sections.

2. (Original) In a rotor as in claim 1 wherein said plurality of rotor core sections are axially aligned with an axis of said rotor core.

3. (Original) In a rotor as in claim 1 wherein said rotor core sections include opposite end core sections and at least one middle core section.

4. (Previously Presented and Allowed) In a rotor in a synchronous machine, comprising:

a superconducting field winding assembly having a coil winding and at least one winding support extending between opposite sides of the winding, and

a rotor core formed of a plurality of rotor core sections, each of said core sections having a slot to receive said winding support, and

wherein said end core sections have a generally L-shaped cross section, and said at least one middle core section has a generally T-shaped cross section.

5. (Previously Presented and Allowed) In a rotor in a synchronous machine, comprising:

a superconducting field winding assembly having a coil winding and at least one winding support extending between opposite sides of the winding, and

a rotor core formed of a plurality of rotor core sections, each of said core sections having a slot to receive said winding support, and

wherein at least one middle core section has a cross-sectional shape with a narrow head, where the head fits between a pair of bars of said winding supports.

6. (Previously Presented and Allowed) In a rotor in a synchronous machine, comprising:

a superconducting field winding assembly having a coil winding and at least one winding support extending between opposite sides of the winding, and

a rotor core formed of a plurality of rotor core sections, each of said core sections having a slot to receive said winding support, and

wherein the at least one rotor core section has a wide region separated from the narrow head by a slot for the winding support.

7. (Original) In a rotor as in claim 1 wherein said winding support further comprising at least one tie rod extending through said slots in the plurality of rotor core sections and securing said core sections together, wherein said tie rod is separated from the slots in the core sections by a gap.

8. (Original) In a rotor as in claim 1 further comprising a vacuum housing over said field coil winding.

9. (Original) In a rotor as in claim 1 wherein said core sections are iron.

10. (Original) In a rotor as in claim 1 wherein said core sections are iron forgings.

11. through 22. (Cancelled)

23. (Previously Presented) A rotor in a synchronous machine, comprising:

a superconducting field winding assembly having a coil winding and at least one winding support extending between opposite sides of the winding, wherein opposite ends of the winding support are attached to the opposite sides of the winding, and

a rotor core formed of a plurality of rotor core sections, each of said core sections having a slot to receive said winding support.

24. (Previously Presented) In a rotor as in claim 23 wherein said plurality of rotor core sections are axially aligned with an axis of said rotor core and the slot in each core section is parallel to a plane of the winding.

25. (Previously Presented) In a rotor as in claim 23 wherein said rotor core sections include opposite end core sections and at least one middle core section.

26. (Previously Presented and Allowed) In a rotor in a synchronous machine, comprising:

a superconducting field winding assembly having a coil winding and at least one winding support extending between opposite sides of the winding, wherein opposite ends of the winding support are attached to the opposite sides of the winding, and

a rotor core formed of a plurality of rotor core sections, each of said core sections having a slot to receive said winding support, and

wherein said rotor core sections include opposite end core sections and at least one middle core section, and said end core sections have a generally L-shaped cross section, and said at least one middle core section has a generally T-shaped cross section.

27. (Previously Presented and Allowed) In a rotor in a synchronous machine, comprising:

a superconducting field winding assembly having a coil winding and at least one winding support extending between opposite sides of the winding, wherein opposite ends of the winding support are attached to the opposite sides of the winding, and

a rotor core formed of a plurality of rotor core sections, each of said core sections having a slot to receive said winding support, and

wherein said rotor core sections include opposite end core sections and at least one middle core section, and at least one middle core section has a cross-sectional shape with a narrow head, wherein the head fits between a pair of bars of said winding supports.

28. (Previously Presented and Allowed) In a rotor in a synchronous machine, comprising:

a superconducting field winding assembly having a coil winding and at least one winding support extending between opposite sides of the winding, wherein opposite ends of the winding support are attached to the opposite sides of the winding, and

a rotor core formed of a plurality of rotor core sections, each of said core sections having a slot to receive said winding support, and

wherein the at least one rotor core section has a wide region separated from the narrow head by the slot for the winding support.

29. (Previously Presented) In a rotor as in claim 23 further comprising at least one tie rod extending through said plurality of rotor core sections and securing said core sections together and said tie rod being substantially perpendicular to said winding support.

30. (Previously Presented) In a rotor as in claim 23 further comprising a vacuum housing over said field coil winding.

31. (Previously Presented) In a rotor as in claim 23 wherein said core sections are iron.

32. (Previously Presented) In a rotor as in claim 23 wherein said core sections are iron forgings.